



CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005



Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-02/777n/CEMENT/2014-15

Date: 02.03.2015

TEST REPORT ON CEMENT

* CUSTOMER	:	Asst. Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.
* AGENCY	:	Technical Manager (West), KRIDL, Bangalore.
* NAME OF THE WORK	:	Improvements to roads and drains at Siddeshwara Layout Bagalagunte in Ward No. 14, Bagalagunte, BBMP, Bangalore.
REFERENCE	:	EE/DD/WO/259/2014-15 Dated: 28.02.2015
SAMPLE ID	:	Cement - Sample 1
SAMPLE RECEIVED ON	:	28.02.2015
PERIOD OF TESTING	:	28.02.2015 to 02.03.2015



The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988(RA-2009)	28.50 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988(RA-2009)	180 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988(RA-2009)	465 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartier Method	IS-4031 (Part-3) 1988(RA-2009)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

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Quality Manager

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Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-02/777n/SAND-Gradation/2014-15

: 02.03.2015

TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

* Customer : Asst. Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency : Technical Manager (West), KRIDL, Bangalore.
* Name of Work : Improvements to roads and drains at Siddeshwara Layout Bagalagunte in Ward No. 14, Bagalagunte, BBMP, Bangalore.
Reference : EE/DD/WO/259/2014-15 Dated: 28.02.2015
Technical Reference : IS : 2386 Part 1 - 1963 RA-2007
Sample ID : Fine Aggregates - Sample 1
Sample Received on : 28.02.2015
Date of Testing : 02.03.2015



Total Wt. of Aggregates in gms 1000

Is Sieve Size in mm	Cumulative Weight Passing in %	Spec.Limits as per IS 383-1970 (RA- 2007)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	93.70	90-100	90-100	90-100	95-100
2.36	78.40	60-95	75-100	85-100	95-100
1.18	57.90	30-70	55-90	75-100	90-100
600 Micron	38.40	15-34	35-59	60-79	80-100
300 Micron	14.70	5-20	8-30	12-40	15-50
150 Micron	3.50	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-II specific limits.

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Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-02/777n/AGG/GR/2014-15

: 02.03.2015

TEST REPORT ON COARSE AGGREGATES

* Customer : Asst. Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.

* Agency : Technical Manager (West), KRIDL, Bangalore.

* Name of Work : Improvements to roads and drains at Siddeshwara Layout Bagalagunte in Ward No. 14, Bagalagunte, BBMP, Bangalore.

Reference : EE/DD/WO/259/2014-15 Dated: 28.02.2015

Technical Reference : IS : 2386 Part 1 -1963 RA-2007

Sample ID : Coarse Aggregates (40mm) - Sample 1

Sample Received on : 28.02.2015

Date of Testing : 02.03.2015



Total Wt. of Aggregates in gms= 10000

Is Sieve Size in mm	Cumulative Weight Passing in %	Spec.Limits as per IS 383-1970 (RA- 2007)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	96.64	95-100	85-100
20	41.52	30-70	0-20
10	11.85	10-35	0-5
4.75	1.33	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits.

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: 05.03.2015

Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-02/777n/CC Solid Block/2014-15

TEST REPORT ON SOLID CONCRETE BLOCKS

* Customer : Asst. Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency : Technical Manager (West), KRIDL, Bangalore.
* Name of the Work : Improvements to roads and drains at Siddeshwara Layout Bagalagunte in Ward No. 14, Bagalagunte, BBMP, Bangalore.
Reference : EE/DD/WO/259/2014-15 Dated: 28.02.2015
Sample Received on : 28.02.2015
Date of Testing : 05.03.2015
Size of Blocks : 400mm x 200mm x 200mm
Cross Sectional Area : 80000 mm²
Technical Reference : IS: 2185 (Part 1) - 2005
No. of Blocks Tested : 08



Sl.No.	Block ID	Wt. in Kg	Failure load (KN)	Compressive strength (N/mm ²)	Requirement as per IS 2185 (Part 1) - 2005
1	Block 1	35.21	262.5	3.28	Minimum required Compressive Strength of Individual Units 3.20 N/mm ²
2	Block 2	34.62	263.4	3.29	
3	Block 3	36.89	266.8	3.34	
4	Block 4	35.47	262.1	3.28	
5	Block 5	36.72	264.8	3.31	
6	Block 6	34.15	265.9	3.32	
7	Block 7	35.56	264.8	3.31	
8	Block 8	34.29	266.1	3.33	

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Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-02/777n/CUBE/2015-16

13.04.2015

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer : Asst. Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.

* Agency : Technical Manager (West), KRIDL, Bangalore.

* Name of the work : Improvements to roads and drains at Siddeshwara Layout Bagalagunte in Ward No. 14, Bagalagunte, BBMP, Bangalore.

Reference : EE/DD/WO/259/2014-15 Dated: 28.02.2015

* Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm²

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

* Grade of Concrete : M₁₅

Compressive Strength as on : 28th day

Sample Received on : 13.04.2015



Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)
1	16.03.2015	13.04.2015	8.145	363.8	16.17
2	16.03.2015	13.04.2015	8.253	381.5	16.96
3	16.03.2015	13.04.2015	8.367	395.4	17.57

* Information is furnished by the Customer/Representative

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Job No.: CTCE/BBMP/W.No.14/KRIDL/CSR-02/777n/Kerb Stone/2014-15

18.03.2015

CEMENT CONCRETE CORE (PRECAST SLAB) TEST REPORT

* Customer : Asst. Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.

* Agency : Technical Manager (West), KRIDL, Bangalore.

* Name of work : Improvements to roads and drains at Siddeshwara Layout Bagalagunte in Ward No. 14, Bagalagunte, BBMP, Bangalore.

Reference : EE/DD/WO/259/2014-15 Dated: 28.02.2015

Technical Reference : IS:516-1959 (Reaffirmed 2008), SP-24:1983.

Sample ID : Precast Slab

Sample Received on : 14.03.2015

Date of Testing : 18.03.2015



Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m ³)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm ²)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm ²)	Equivalent Cube Compressive Strength (N/mm ²)
1	50.00	74.00	0.365	2512.07	1.48	0.960	32.6	16.58	17.91	17.19	21.49
2	50.00	76.00	0.379	2539.78	1.52	0.955	32.9	16.75	18.09	17.28	21.60
3	50.00	75.00	0.372	2526.11	1.50	0.950	33.3	16.95	18.31	17.39	21.74

* Information is furnished by the Customer/Representative

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18.03.2015



GRADATION FOR WMM MORTH TABLE-400-11

Customer : Asst. Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : Technical Manager (West), KRIDL, Bangalore.

Name of Work : Improvements to roads and drains at Siddeshwara Layout Bagalagunte in Ward No. 14, Bagalagunte, BBMP, Bangalore.

Reference : EE/DD/WO/259/2014-15 Dated: 28.02.2015

Date of Testing : 18.03.2015

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): 7255

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	285	285	3.9	96.1	95-100
22.4	2515	2800	38.6	61.4	60-80
11.2	1410	4210	58.0	42.0	40-60
4.75	745	4955	68.3	31.7	25-40
2.36	935	5890	81.2	18.8	15-30
0.600	520	6410	88.4	11.6	8-22
0.075	460	6870	94.7	5.3	0-8

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Job No.: CTCE/BBMP/W.No.14/KRIDL/WMM/AIV/2014-15

18.03.2015



Aggregate Impact Value

IS: 2386 Part IV

Client	Asst. Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	Technical Manager (West), KRIDL, Bangalore.
Name of the Work	Improvements to roads and drains at Siddeshwara Layout Bagalagunte in Ward No. 14, Bagalagunte, BBMP, Bangalore.
Reference	EE/DD/WO/259/2014-15 Dated: 28.02.2015
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	18.03.2015

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	381	385	21.93
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	82	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	299	299	
4	Aggregate Impact value = percent fines	21.52	22.34	
	$100 * (W_2/W_1) \%$			21.93

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.14/KRIDL/WMM/S-T/2014-15

18.03.2015

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	Asst. Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.
Agency	Technical Manager (West), KRIDL, Bangalore.
Name of Work	Improvements to roads and drains at Siddeshwara Layout Bagalagunte in Ward No. 14, Bagalagunte, BBMP, Bangalore.
Reference	EE/DD/WO/259/2014-15 Dated: 28.02.2015
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	18.03.2015



Result : Flakiness Index = 11.29%

Elongation Index = 13.46%

Result : Combined Flakiness & Elongation index 24.75%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

Note:

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Job No.: CTCE/BBMP/W.No.14/KRIDL/SDBC/Bitumen/2014-15

28.03.2015

BITUMEN DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AS per IRC : SP : 11 - 1984

CLIENT	Asst. Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	Technical Manager (West), KRIDL, Bangalore.
NAME OF THE WORK	Improvements to roads and drains at Siddeshwara Layout Bagalagunte in Ward No. 14, Bagalagunte, BBMP, Bangalore.
REFERENCE	EE/DD/WO/259/2014-15 Dated: 28.02.2015
SAMPLE I/D	Roads in Siddeshwara Layout, Ward No. 14
DATE OF TESTING	28.03.2015



BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474.5	474.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25.5	25.50
7. Bitumen content in %	5.10	5.10
8. Average	5.10	

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 ಪಿ. ದಾಸರಹಳ್ಳಿ ಉಪ ವಿಭಾಗ
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CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

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Job No.: CTCE/BBMP/W.No.14/KRIDL/SDBC/Gradation/2014-15

28.03.2015

GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

As per IS : 2386 and IRC : SP : 11 - 1984

CLIENT	Asst. Executive Engineer, T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	Technical Manager (West), KRIDL, Bangalore.
NAME OF THE WORK	Improvements to roads and drains at Siddeshwara Layout Bagalagunte in Ward No. 14, Bagalagunte, BBMP, Bangalore.
REFERENCE	EE/DD/WO/259/2014-15 Dated: 28.02.2015
SAMPLE I/D	Roads in Siddeshwara Layout, Ward No. 14
DATE OF TESTING	28.03.2015



GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cumulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	26.35	5.55	5.55	94.45	90-100
4.75	251.94	53.10	58.65	41.35	35-51
2.36	52.38	11.04	69.69	30.31	24-39
1.18	27.83	5.87	75.55	24.45	15-30
0.3	57.48	12.11	87.67	12.33	9-19
0.075	36.95	7.79	95.45	4.55	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cumulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	32.65	6.88	6.88	93.12	90-100
4.75	256.25	54.00	60.89	39.11	35-51
2.36	43.85	9.24	70.13	29.87	24-39
1.18	42.15	8.88	79.01	20.99	15-30
0.3	32.76	6.90	85.91	14.09	9-19
0.075	40.67	8.57	94.48	5.52	3-8

Note:

- Ⓐ This test report should not be reproduced except in full, without written approval of the laboratory.
- Ⓑ The results indicated above are based on the tests carried out on the samples received in the laboratory.
- Ⓒ Any Query regarding the report must be reported within 30 days from the date of testing.

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ಇ. ದಾಸರಹಳ್ಳಿ ಉಪ ವಿಭಾಗ
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Handwritten signature.
M/s. Civil-Tech Consultants & Engineers
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